SEQUENCE LISTING

<110> Bayer CropScience GmbH

<120> Plants with increased activity of a Class 3 branching enzyme

<130> BCS 03-5005-PCT

<150> EP 03090324.9
<151> 2003-09-30

<160> 6

<170> PatentIn version 3.1

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tctttctgcc tcagagatgt ggcttgcatt acttgaaaat actcctgatc atgaatggtg    1980

catgagtaag attgttagca cattagtggg cgatagacaa aatactgata aaatgctttt    2040

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                                             Met Leu Ser Leu Ser Asp
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tca att cga att tct tca cca ttg agc gat tct cgt ctt agt ttt cta    164
Ser Ile Arg Ile Ser Ser Pro Leu Ser Asp Ser Arg Leu Ser Phe Leu
             10              15                  20

tct caa acc gga agc aga acc agt cgc cag ctt aaa ttt gtt cgc agc    212
Ser Gln Thr Gly Ser Arg Thr Ser Arg Gln Leu Lys Phe Val Arg Ser
         25              30                  35

cgc cgg gct cga gtt tcg agg tgt aga tgc tca gca acg gag caa ccg    260
Arg Arg Ala Arg Val Ser Arg Cys Arg Cys Ser Ala Thr Glu Gln Pro
     40              45                  50

cca ccg caa cga cgg aag caa cga ccg gag aag tac aaa cag tcg gag    308
Pro Pro Gln Arg Arg Lys Gln Arg Pro Glu Lys Tyr Lys Gln Ser Glu
55              60              65                  70

gaa gag aaa gga atc gat cct gtt gga ttt ctc agc aaa tac ggc att    356
Glu Glu Lys Gly Ile Asp Pro Val Gly Phe Leu Ser Lys Tyr Gly Ile
                 75              80                  85
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3

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act cat aaa gcg ttt gct caa ttt ctt cgt gaa aga tat aaa tca ttg        404
Thr His Lys Ala Phe Ala Gln Phe Leu Arg Glu Arg Tyr Lys Ser Leu
            90                  95                  100

aag gac ttg aag gat gaa ata ttg act cgt cat ttc agt ctc aag gag        452
Lys Asp Leu Lys Asp Glu Ile Leu Thr Arg His Phe Ser Leu Lys Glu
            105                 110                 115

atg tct act ggg tat gaa tta atg ggt atg cat cgc aac ata caa cat        500
Met Ser Thr Gly Tyr Glu Leu Met Gly Met His Arg Asn Ile Gln His
            120                 125                 130

cga gtg gat ttc ttg gaa tgg gct cca ggt gct cgc tac tgt gct ctg        548
Arg Val Asp Phe Leu Glu Trp Ala Pro Gly Ala Arg Tyr Cys Ala Leu
135                 140                 145                 150

att ggt gac ttc aat ggg tgg tca aca act ggt aac tgt gcc aga gag        596
Ile Gly Asp Phe Asn Gly Trp Ser Thr Thr Gly Asn Cys Ala Arg Glu
                155                 160                 165

ggt cat ttt ggt cat gac gat tat ggg tat tgg ttt att att ctt gaa        644
Gly His Phe Gly His Asp Asp Tyr Gly Tyr Trp Phe Ile Ile Leu Glu
            170                 175                 180

gat aaa tta cgt gaa gga gaa gaa cct gat aaa ttg tat ttt caa cag        692
Asp Lys Leu Arg Glu Gly Glu Glu Pro Asp Lys Leu Tyr Phe Gln Gln
            185                 190                 195

tac aat tat gcg gag gac tat gat aaa ggt gac acg ggt att acc gtc        740
Tyr Asn Tyr Ala Glu Asp Tyr Asp Lys Gly Asp Thr Gly Ile Thr Val
            200                 205                 210

gag gaa atc ttt aaa aaa gca aat gat gag tat tgg gaa cct gga gaa        788
Glu Glu Ile Phe Lys Lys Ala Asn Asp Glu Tyr Trp Glu Pro Gly Glu
215                 220                 225                 230

gat cgc ttc att aaa tca cgt tat gag gtg gca gca aag tta tat gag        836
Asp Arg Phe Ile Lys Ser Arg Tyr Glu Val Ala Ala Lys Leu Tyr Glu
                235                 240                 245

gaa atg ttc gga cca aat gga cct caa aca gaa gag gaa cta gaa gca        884
Glu Met Phe Gly Pro Asn Gly Pro Gln Thr Glu Glu Glu Leu Glu Ala
                250                 255                 260

atg cct gat gca gct aca cga tac aaa act tgg aaa gag caa caa aaa        932
Met Pro Asp Ala Ala Thr Arg Tyr Lys Thr Trp Lys Glu Gln Gln Lys
            265                 270                 275

aag gat ccg gca agc aat ttg cca tcg tat gat gtg gta gat agt gga        980
Lys Asp Pro Ala Ser Asn Leu Pro Ser Tyr Asp Val Val Asp Ser Gly
            280                 285                 290

aaa gaa tat gat att tac aat att ata ggt gat cct gaa tcg ttt aag        1028
Lys Glu Tyr Asp Ile Tyr Asn Ile Ile Gly Asp Pro Glu Ser Phe Lys
295                 300                 305                 310

aaa ttt cgt atg aaa cag cct cct att gct tac tgg tta gaa act aaa        1076
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4

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Lys Gly Arg Lys Gly Trp Leu Gln Lys Tyr Met Pro Ala Leu Pro His
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gga agc aaa cac agg gtg tat ttt aac aca cca aat ggg cct ctt gaa      1172
Gly Ser Lys His Arg Val Tyr Phe Asn Thr Pro Asn Gly Pro Leu Glu
                345             350             355

cga gtt cct gcg tgg gcc aat ttt gtc att cca gat gca gac ggg atg      1220
Arg Val Pro Ala Trp Ala Asn Phe Val Ile Pro Asp Ala Asp Gly Met
                360             365             370

gca tta gca gtc cat tgg gaa cca cct cct gaa tat gct tat aaa tgg      1268
Ala Leu Ala Val His Trp Glu Pro Pro Pro Glu Tyr Ala Tyr Lys Trp
375                 380             385                 390

aaa cac aag cta cca gtc aag cct aag tcc ttg cgc ata tat gaa tgt      1316
Lys His Lys Leu Pro Val Lys Pro Lys Ser Leu Arg Ile Tyr Glu Cys
                395             400             405

cat gtt ggc atc tct ggc cag gaa cca aaa gtt tca tct ttc aat gat      1364
His Val Gly Ile Ser Gly Gln Glu Pro Lys Val Ser Ser Phe Asn Asp
                410             415             420

ttt att agc aag gtc ctt ccg cat gta aaa gaa gct gga tac aat gca      1412
Phe Ile Ser Lys Val Leu Pro His Val Lys Glu Ala Gly Tyr Asn Ala
                425             430             435

acg caa att att gga gtt gtt gag cac aag gat tat ttc act gtt gga      1460
Thr Gln Ile Ile Gly Val Val Glu His Lys Asp Tyr Phe Thr Val Gly
                440             445             450

tat aga gtg acc aat ttt tat gct gtt agt agc cgt tat ggc aca ccg      1508
Tyr Arg Val Thr Asn Phe Tyr Ala Val Ser Ser Arg Tyr Gly Thr Pro
455                 460             465                 470

gat gac ttc aag cgc ttg gtt gat gaa gca cat ggg ctt gga ctg ctt      1556
Asp Asp Phe Lys Arg Leu Val Asp Glu Ala His Gly Leu Gly Leu Leu
                475             480             485

gtc ttt ttg gag att gtg cac tcc tat gca gca gca gat gaa atg gtt      1604
Val Phe Leu Glu Ile Val His Ser Tyr Ala Ala Ala Asp Glu Met Val
                490             495             500

ggg tta tct ctt ttt gat gga gca aat gat tgc tat ttc cac act ggt      1652
Gly Leu Ser Leu Phe Asp Gly Ala Asn Asp Cys Tyr Phe His Thr Gly
                505             510             515

aaa cgt gga cac cac aaa ttc tgg ggc aca cgg atg ttc aaa tat gga      1700
Lys Arg Gly His His Lys Phe Trp Gly Thr Arg Met Phe Lys Tyr Gly
                520             525             530

gat cct gat gtt ctg cac ttt ctt ctt tca aat ctg aac tgg tgg gtg      1748
Asp Pro Asp Val Leu His Phe Leu Leu Ser Asn Leu Asn Trp Trp Val
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5

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Glu Glu Tyr His Val Asp Gly Phe His Phe His Ser Leu Ser Ser Met
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ttg tat acg cat aat gga ttt gct tca ttt act ggt gac atg gat gaa    1844
Leu Tyr Thr His Asn Gly Phe Ala Ser Phe Thr Gly Asp Met Asp Glu
            570                 575                 580

tac tgt aac caa tat gtt gac aag gag gcc tta ttg tac ctc ata tta    1892
Tyr Cys Asn Gln Tyr Val Asp Lys Glu Ala Leu Leu Tyr Leu Ile Leu
            585                 590                 595

gca aat gaa gta tta cat gct ctt cat cct aat gtg atc acg att gct    1940
Ala Asn Glu Val Leu His Ala Leu His Pro Asn Val Ile Thr Ile Ala
            600                 605                 610

gtg gat gca act ctg tat cct gga ctc tgc gat cca aca tct caa ggt    1988
Val Asp Ala Thr Leu Tyr Pro Gly Leu Cys Asp Pro Thr Ser Gln Gly
615                 620                 625                 630

gga ctg ggc ttt gat tat ttt gcc aat ctt tct gcc tca gag atg tgg    2036
Gly Leu Gly Phe Asp Tyr Phe Ala Asn Leu Ser Ala Ser Glu Met Trp
            635                 640                 645

ctt gca tta ctt gaa aat act cct gat cat gaa tgg tgc atg agt aag    2084
Leu Ala Leu Leu Glu Asn Thr Pro Asp His Glu Trp Cys Met Ser Lys
            650                 655                 660

att gtt agc aca tta gtg ggc gat aga caa aat act gat aaa atg ctt    2132
Ile Val Ser Thr Leu Val Gly Asp Arg Gln Asn Thr Asp Lys Met Leu
            665                 670                 675

ttg tat gca gaa aat cac aac cag tcc att tct gga ggt cgt tcc ttc    2180
Leu Tyr Ala Glu Asn His Asn Gln Ser Ile Ser Gly Gly Arg Ser Phe
            680                 685                 690

gca gaa ata ctg att ggt aac tcc ttg ggg aaa tct tcc ata tca caa    2228
Ala Glu Ile Leu Ile Gly Asn Ser Leu Gly Lys Ser Ser Ile Ser Gln
695                 700                 705                 710

gag tca tta ctt aga ggc tgc tcg tta cac aag atg atc aga tta att    2276
Glu Ser Leu Leu Arg Gly Cys Ser Leu His Lys Met Ile Arg Leu Ile
            715                 720                 725

aca tct aca att ggt ggt cat gca tac ctc aac ttc atg ggc aat gaa    2324
Thr Ser Thr Ile Gly Gly His Ala Tyr Leu Asn Phe Met Gly Asn Glu
            730                 735                 740

ttt ggt cac cca aag aga gta gag ttt cca atg tca agc aac aat ttc    2372
Phe Gly His Pro Lys Arg Val Glu Phe Pro Met Ser Ser Asn Asn Phe
            745                 750                 755

tcc ttt tca ctg gct aac cgt cgc tgg gat cta ttg gaa gat gtt gta    2420
Ser Phe Ser Leu Ala Asn Arg Arg Trp Asp Leu Leu Glu Asp Val Val
            760                 765                 770
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6

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cat tat caa tta ttc tca ttt gat aag gat atg atg gac ttg gat aaa       2468
His Tyr Gln Leu Phe Ser Phe Asp Lys Asp Met Met Asp Leu Asp Lys
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aat ggg aga att ttg tcc aga ggt ctt gcc aac att cac cat gtc aat       2516
Asn Gly Arg Ile Leu Ser Arg Gly Leu Ala Asn Ile His His Val Asn
                795             800             805

gat act acc atg gtg att tct tac ttg aga ggt ccc aat ctc ttt gtg       2564
Asp Thr Thr Met Val Ile Ser Tyr Leu Arg Gly Pro Asn Leu Phe Val
            810             815             820

ttc aac ttt cat cct gtc aat tca tat gaa aga tac att ata ggt gtg       2612
Phe Asn Phe His Pro Val Asn Ser Tyr Glu Arg Tyr Ile Ile Gly Val
                825             830             835

gaa gaa gct gga gag tat caa gtc aca tta aat aca gat gaa aac aag       2660
Glu Glu Ala Gly Glu Tyr Gln Val Thr Leu Asn Thr Asp Glu Asn Lys
        840             845             850

tat ggt ggt aga gga cta ctt ggc cat gat cag aat act caa aga acc       2708
Tyr Gly Gly Arg Gly Leu Leu Gly His Asp Gln Asn Thr Gln Arg Thr
855             860             865             870

att agt aga aga gct gat gga atg aga ttt tgc ttg gaa gta cct ctg       2756
Ile Ser Arg Arg Ala Asp Gly Met Arg Phe Cys Leu Glu Val Pro Leu
                875             880             885

cca agt aga agt gct cag gtc tac aag ttg acc cga att cta aga gca       2804
Pro Ser Arg Ser Ala Gln Val Tyr Lys Leu Thr Arg Ile Leu Arg Ala
                890             895             900

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7

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Leu Lys Phe Val Arg Ser Arg Arg Ala Arg Val Ser Arg Cys Arg Cys
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Ser Ala Thr Glu Gln Pro Pro Pro Gln Arg Arg Lys Gln Arg Pro Glu
    50   55   60

Lys Tyr Lys Gln Ser Glu Glu Lys Gly Ile Asp Pro Val Gly Phe
65   70   75   80

Leu Ser Lys Tyr Gly Ile Thr His Lys Ala Phe Ala Gln Phe Leu Arg
            85   90   95

Glu Arg Tyr Lys Ser Leu Lys Asp Leu Lys Asp Glu Ile Leu Thr Arg
        100   105   110

His Phe Ser Leu Lys Glu Met Ser Thr Gly Tyr Glu Leu Met Gly Met
        115   120   125

His Arg Asn Ile Gln His Arg Val Asp Phe Leu Glu Trp Ala Pro Gly
    130   135   140

Ala Arg Tyr Cys Ala Leu Ile Gly Asp Phe Asn Gly Trp Ser Thr Thr
145   150   155   160

Gly Asn Cys Ala Arg Glu Gly His Phe Gly His Asp Asp Tyr Gly Tyr
            165   170   175

Trp Phe Ile Ile Leu Glu Asp Lys Leu Arg Glu Gly Glu Glu Pro Asp
            180   185   190

Lys Leu Tyr Phe Gln Gln Tyr Asn Tyr Ala Glu Asp Tyr Asp Lys Gly
        195   200   205

Asp Thr Gly Ile Thr Val Glu Glu Ile Phe Lys Lys Ala Asn Asp Glu
    210   215   220

Tyr Trp Glu Pro Gly Glu Asp Arg Phe Ile Lys Ser Arg Tyr Glu Val
225   230   235   240

8

Ala Ala Lys Leu Tyr Glu Glu Met Phe Gly Pro Asn Gly Pro Gln Thr
            245   250   255

Glu Glu Glu Leu Glu Ala Met Pro Asp Ala Ala Thr Arg Tyr Lys Thr
            260   265   270

Trp Lys Glu Gln Gln Lys Lys Asp Pro Ala Ser Asn Leu Pro Ser Tyr
            275   280   285

Asp Val Val Asp Ser Gly Lys Glu Tyr Asp Ile Tyr Asn Ile Ile Gly
    290   295   300

Asp Pro Glu Ser Phe Lys Lys Phe Arg Met Lys Gln Pro Pro Ile Ala
305   310   315   320

Tyr Trp Leu Glu Thr Lys Lys Gly Arg Lys Gly Trp Leu Gln Lys Tyr
            325   330   335

Met Pro Ala Leu Pro His Gly Ser Lys His Arg Val Tyr Phe Asn Thr
            340   345   350

Pro Asn Gly Pro Leu Glu Arg Val Pro Ala Trp Ala Asn Phe Val Ile
            355   360   365

Pro Asp Ala Asp Gly Met Ala Leu Ala Val His Trp Glu Pro Pro Pro
    370   375   380

Glu Tyr Ala Tyr Lys Trp Lys His Lys Leu Pro Val Lys Pro Lys Ser
385   390   395   400

Leu Arg Ile Tyr Glu Cys His Val Gly Ile Ser Gly Gln Glu Pro Lys
            405   410   415

Val Ser Ser Phe Asn Asp Phe Ile Ser Lys Val Leu Pro His Val Lys
            420   425   430

Glu Ala Gly Tyr Asn Ala Thr Gln Ile Ile Gly Val Val Glu His Lys
            435   440   445

Asp Tyr Phe Thr Val Gly Tyr Arg Val Thr Asn Phe Tyr Ala Val Ser
    450   455   460

Ser Arg Tyr Gly Thr Pro Asp Asp Phe Lys Arg Leu Val Asp Glu Ala
465   470   475   480

His Gly Leu Gly Leu Leu Val Phe Leu Glu Ile Val His Ser Tyr Ala
              485   490   495

Ala Ala Asp Glu Met Val Gly Leu Ser Leu Phe Asp Gly Ala Asn Asp
          500   505   510

Cys Tyr Phe His Thr Gly Lys Arg Gly His His Lys Phe Trp Gly Thr
          515   520   525

Arg Met Phe Lys Tyr Gly Asp Pro Asp Val Leu His Phe Leu Leu Ser
          530   535   540

Asn Leu Asn Trp Trp Val Glu Glu Tyr His Val Asp Gly Phe His Phe
545   550   555   560

His Ser Leu Ser Ser Met Leu Tyr Thr His Asn Gly Phe Ala Ser Phe
              565   570   575

Thr Gly Asp Met Asp Glu Tyr Cys Asn Gln Tyr Val Asp Lys Glu Ala
              580   585   590

Leu Leu Tyr Leu Ile Leu Ala Asn Glu Val Leu His Ala Leu His Pro
          595   600   605

Asn Val Ile Thr Ile Ala Val Asp Ala Thr Leu Tyr Pro Gly Leu Cys
          610   615   620

Asp Pro Thr Ser Gln Gly Gly Leu Gly Phe Asp Tyr Phe Ala Asn Leu
625   630   635   640

Ser Ala Ser Glu Met Trp Leu Ala Leu Leu Glu Asn Thr Pro Asp His
              645   650   655

Glu Trp Cys Met Ser Lys Ile Val Ser Thr Leu Val Gly Asp Arg Gln
          660   665   670

Asn Thr Asp Lys Met Leu Leu Tyr Ala Glu Asn His Asn Gln Ser Ile
          675   680   685

Ser Gly Gly Arg Ser Phe Ala Glu Ile Leu Ile Gly Asn Ser Leu Gly

690   695   700

Lys Ser Ser Ile Ser Gln Glu Ser Leu Leu Arg Gly Cys Ser Leu His
705   710   715   720

Lys Met Ile Arg Leu Ile Thr Ser Thr Ile Gly Gly His Ala Tyr Leu
            725   730   735

Asn Phe Met Gly Asn Glu Phe Gly His Pro Lys Arg Val Glu Phe Pro
            740   745   750

Met Ser Ser Asn Asn Phe Ser Phe Ser Leu Ala Asn Arg Arg Trp Asp
            755   760   765

Leu Leu Glu Asp Val Val His Tyr Gln Leu Phe Ser Phe Asp Lys Asp
            770   775   780

Met Met Asp Leu Asp Lys Asn Gly Arg Ile Leu Ser Arg Gly Leu Ala
785   790   795   800

Asn Ile His His Val Asn Asp Thr Thr Met Val Ile Ser Tyr Leu Arg
                805   810   815

Gly Pro Asn Leu Phe Val Phe Asn Phe His Pro Val Asn Ser Tyr Glu
            820   825   830

Arg Tyr Ile Ile Gly Val Glu Glu Ala Gly Glu Tyr Gln Val Thr Leu
            835   840   845

Asn Thr Asp Glu Asn Lys Tyr Gly Gly Arg Gly Leu Leu Gly His Asp
            850   855   860

Gln Asn Thr Gln Arg Thr Ile Ser Arg Arg Ala Asp Gly Met Arg Phe
865   870   875   880

Cys Leu Glu Val Pro Leu Pro Ser Arg Ser Ala Gln Val Tyr Lys Leu
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Thr Arg Ile Leu Arg Ala
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      1               5                  10                  15

gat tct cgt ctt agt ttt cta tct caa acc gga agc aga acc agt cgc        97
Asp Ser Arg Leu Ser Phe Leu Ser Gln Thr Gly Ser Arg Thr Ser Arg
                 20                  25                  30

cag ctt aaa ttt gtt cgc agc cgc cgg gct cga gtt tcg agg tgt aga       145
Gln Leu Lys Phe Val Arg Ser Arg Arg Ala Arg Val Ser Arg Cys Arg
             35                  40                  45

tgc tca gca acg gag caa ccg cca ccg caa cga cgg aag caa cga ccg       193
Cys Ser Ala Thr Glu Gln Pro Pro Pro Gln Arg Arg Lys Gln Arg Pro
         50                  55                  60

gag aag tac aaa cag tcg gag gaa ggg aaa gga atc gat cct gtt gga       241
Glu Lys Tyr Lys Gln Ser Glu Glu Gly Lys Gly Ile Asp Pro Val Gly
         65                  70                  75

ttt ctc agc aaa tac ggc att act cat aaa gcg ttt gct caa ttt ctt       289
Phe Leu Ser Lys Tyr Gly Ile Thr His Lys Ala Phe Ala Gln Phe Leu
80                  85                  90                  95

cgt gaa aga tat aaa tca ttg aag gac ttg aag gat gaa ata ttg act       337
Arg Glu Arg Tyr Lys Ser Leu Lys Asp Leu Lys Asp Glu Ile Leu Thr
                100                 105                 110

cgt cat ttc agt ctc aag gag atg tct act ggg tat gaa tta atg ggt       385
Arg His Phe Ser Leu Lys Glu Met Ser Thr Gly Tyr Glu Leu Met Gly
             115                 120                 125

atg cat cgc aac ata caa cat cga gtg gat ttc ttg gaa tgg gct cca       433
Met His Arg Asn Ile Gln His Arg Val Asp Phe Leu Glu Trp Ala Pro
         130                 135                 140

ggt gct cgc tac tgt gct ctg att ggt gac ttc aat ggg tgg tca aca       481
Gly Ala Arg Tyr Cys Ala Leu Ile Gly Asp Phe Asn Gly Trp Ser Thr
         145                 150                 155

act ggt aac tgt gcc aga gag ggt cat ttt ggt cat gac gat tat ggg       529
Thr Gly Asn Cys Ala Arg Glu Gly His Phe Gly His Asp Asp Tyr Gly
160                 165                 170                 175

tat tgg ttt att att ctt gaa gat aaa tta cgt gaa gga gaa gaa cct       577
Tyr Trp Phe Ile Ile Leu Glu Asp Lys Leu Arg Glu Gly Glu Glu Pro
                180                 185                 190
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gat aaa ttg tat ttt caa cag tac aat tat gcg gag gac tat ggt aaa        625
Asp Lys Leu Tyr Phe Gln Gln Tyr Asn Tyr Ala Glu Asp Tyr Gly Lys
            195                 200                 205

ggt gac acg ggt att acc gtc gag gaa atc ttt aaa aaa gca aat gat        673
Gly Asp Thr Gly Ile Thr Val Glu Glu Ile Phe Lys Lys Ala Asn Asp
            210                 215                 220

gag tat tgg gaa cct gga gaa gat cgc ttc att aaa tca cgt tat gag        721
Glu Tyr Trp Glu Pro Gly Glu Asp Arg Phe Ile Lys Ser Arg Tyr Glu
            225                 230                 235

gtg gca gca aag tta tat gag gaa atg ttc gga cca aat gga cct caa        769
Val Ala Ala Lys Leu Tyr Glu Glu Met Phe Gly Pro Asn Gly Pro Gln
240                 245                 250                 255

aca gaa gag gaa cta gaa gca atg cct gat gca gct aca cga tac aaa        817
Thr Glu Glu Glu Leu Glu Ala Met Pro Asp Ala Ala Thr Arg Tyr Lys
                260                 265                 270

act tgg aaa gag caa caa aaa gag gat ccg gca agc aat ttg cca tcg        865
Thr Trp Lys Glu Gln Gln Lys Glu Asp Pro Ala Ser Asn Leu Pro Ser
            275                 280                 285

tat gat gtg gta gat agt gga aaa gaa tat gat att tac aat att ata        913
Tyr Asp Val Val Asp Ser Gly Lys Glu Tyr Asp Ile Tyr Asn Ile Ile
            290                 295                 300

ggt gat cct gaa tcg ttt aag aaa ttt cgt atg aaa cag cct cct att        961
Gly Asp Pro Glu Ser Phe Lys Lys Phe Arg Met Lys Gln Pro Pro Ile
            305                 310                 315

gct tac tgg tta gaa act aaa aag gga agg aaa ggc tgg tta cag aaa       1009
Ala Tyr Trp Leu Glu Thr Lys Lys Gly Arg Lys Gly Trp Leu Gln Lys
320                 325                 330                 335

tat atg cct gct tta cct cat gga agc aaa tac agg gtg tat ttt aac       1057
Tyr Met Pro Ala Leu Pro His Gly Ser Lys Tyr Arg Val Tyr Phe Asn
            340                 345                 350

aca cca aat ggg cct ctt gaa cga gtt cct gcg tgg gcc aat ttt gtc       1105
Thr Pro Asn Gly Pro Leu Glu Arg Val Pro Ala Trp Ala Asn Phe Val
            355                 360                 365

att cca gat gca ggc ggg atg gca tta gca gtc cat tgg gaa cca cct       1153
Ile Pro Asp Ala Gly Gly Met Ala Leu Ala Val His Trp Glu Pro Pro
            370                 375                 380

cct gaa tat gct tat aaa tgg aaa cac aag cta cca gtc aag cct aag       1201
Pro Glu Tyr Ala Tyr Lys Trp Lys His Lys Leu Pro Val Lys Pro Lys
            385                 390                 395

tcc ttg cgc ata tat gaa tgt cat gtt ggc atc tct ggc cag gaa cca       1249
Ser Leu Arg Ile Tyr Glu Cys His Val Gly Ile Ser Gly Gln Glu Pro
400                 405                 410                 415
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13

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aaa gtt tca tct ttc aat gat ttt att agc aag gtc ctt ccg cat gta    1297
Lys Val Ser Ser Phe Asn Asp Phe Ile Ser Lys Val Leu Pro His Val
            420                 425                 430

aaa gaa gct gga tac aat gca ata caa att att gga gtt gtt gag cac    1345
Lys Glu Ala Gly Tyr Asn Ala Ile Gln Ile Ile Gly Val Val Glu His
            435                 440                 445

aag gat tat ttc act gtt gga tat aga gtg acc aat ttt tat gct gtt    1393
Lys Asp Tyr Phe Thr Val Gly Tyr Arg Val Thr Asn Phe Tyr Ala Val
            450                 455                 460

agt agc cgt tat ggc aca ccg gat gac ttc aag cgc ttg gtt gat gaa    1441
Ser Ser Arg Tyr Gly Thr Pro Asp Asp Phe Lys Arg Leu Val Asp Glu
            465                 470                 475

gca cat ggg ctt gga ctg ctt gtc ttt ttg gag att gtg cac tct tat    1489
Ala His Gly Leu Gly Leu Leu Val Phe Leu Glu Ile Val His Ser Tyr
480                 485                 490                 495

gca gca gca gat gaa atg gtt ggg tta tct ctt ttt gat gga gca aat    1537
Ala Ala Ala Asp Glu Met Val Gly Leu Ser Leu Phe Asp Gly Ala Asn
                500                 505                 510

gat tgc tat ttc cac act ggt aaa cgt gga cac cac aaa ttc tgg ggc    1585
Asp Cys Tyr Phe His Thr Gly Lys Arg Gly His His Lys Phe Trp Gly
            515                 520                 525

aca cgg atg ttc aaa tat gga gat ctt gat gtt ctg cac ttt ctt ctt    1633
Thr Arg Met Phe Lys Tyr Gly Asp Leu Asp Val Leu His Phe Leu Leu
            530                 535                 540

tca aat ctg aac tgg tgg gtg gag gag tat cat gtc gat ggc ttc cat    1681
Ser Asn Leu Asn Trp Trp Val Glu Glu Tyr His Val Asp Gly Phe His
            545                 550                 555

ttt cat tcg ctc tcg tcc atg ttg tat acg cat aat gga ttt gct tca    1729
Phe His Ser Leu Ser Ser Met Leu Tyr Thr His Asn Gly Phe Ala Ser
560                 565                 570                 575

ttt act ggt gac atg gat gaa tac tgt aac caa tat gtt gac aag gag    1777
Phe Thr Gly Asp Met Asp Glu Tyr Cys Asn Gln Tyr Val Asp Lys Glu
                580                 585                 590

gcc tta ttg tac ctc ata tta gca aat gaa gta tta cat gct ctt cat    1825
Ala Leu Leu Tyr Leu Ile Leu Ala Asn Glu Val Leu His Ala Leu His
            595                 600                 605

cct aat gtg atc acg att gct gag gat gca act ctg tat cct gga ctc    1873
Pro Asn Val Ile Thr Ile Ala Glu Asp Ala Thr Leu Tyr Pro Gly Leu
            610                 615                 620

tgc gat cca aca tct caa ggt gga ctg ggc ttt gat tat ttt gcc aat    1921
Cys Asp Pro Thr Ser Gln Gly Gly Leu Gly Phe Asp Tyr Phe Ala Asn
            625                 630                 635

ctt tct gcc tca gag atg tgg ctt gca tta ctt gaa aat act cct gat    1969
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14

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Leu Ser Ala Ser Glu Met Trp Leu Ala Leu Leu Glu Asn Thr Pro Asp
640               645                 650                 655

cat gaa tgg tgc atg agt aag att gtt agc aca tta gtg ggc gat aga       2017
His Glu Trp Cys Met Ser Lys Ile Val Ser Thr Leu Val Gly Asp Arg
                    660                 665                 670

caa aat act gat aaa atg ctt ttg tat gca gaa aat cac aac cag tcc       2065
Gln Asn Thr Asp Lys Met Leu Leu Tyr Ala Glu Asn His Asn Gln Ser
                675                 680                 685

att tct gga ggt cgt tcc ttc gca gaa ata ctg att ggt aac tcc ttg       2113
Ile Ser Gly Gly Arg Ser Phe Ala Glu Ile Leu Ile Gly Asn Ser Leu
                690                 695                 700

ggg aaa tcc tcc ata tca caa gag tca tta ctt aga ggc tgc tcg tta       2161
Gly Lys Ser Ser Ile Ser Gln Glu Ser Leu Leu Arg Gly Cys Ser Leu
            705                 710                 715

cac aag atg atc aga tta att aca tct aca att ggt ggt cat gca tac       2209
His Lys Met Ile Arg Leu Ile Thr Ser Thr Ile Gly Gly His Ala Tyr
720                 725                 730                 735

ctc aac ttc atg ggc aat gaa ttt ggt cac cca aag aga gta gag ttt       2257
Leu Asn Phe Met Gly Asn Glu Phe Gly His Pro Lys Arg Val Glu Phe
                740                 745                 750

cca atg tca agc aac aat ttc tcc ttt tca ctg gct aac cgt cgc tgg       2305
Pro Met Ser Ser Asn Asn Phe Ser Phe Ser Leu Ala Asn Arg Arg Trp
                755                 760                 765

gat cta ttg gaa gat gtt gta cat tat caa ttg ttc tca ttt gat aag       2353
Asp Leu Leu Glu Asp Val Val His Tyr Gln Leu Phe Ser Phe Asp Lys
            770                 775                 780

ggt atg atg gac ttg gat aaa aat ggg aga att ttg tcc aga ggt ctt       2401
Gly Met Met Asp Leu Asp Lys Asn Gly Arg Ile Leu Ser Arg Gly Leu
            785                 790                 795

gcc aac att cac cat gtc aat gat act acc atg gtg att tct tac ttg       2449
Ala Asn Ile His His Val Asn Asp Thr Thr Met Val Ile Ser Tyr Leu
800                 805                 810                 815

aga ggt ccc aat ctc ttt gtg ttc aac ttt cat cct gtc aat tca tat       2497
Arg Gly Pro Asn Leu Phe Val Phe Asn Phe His Pro Val Asn Ser Tyr
                820                 825                 830

gaa aga tac att ata ggt gtg gaa gaa gct gga gag tat caa gtc aca       2545
Glu Arg Tyr Ile Ile Gly Val Glu Glu Ala Gly Glu Tyr Gln Val Thr
                835                 840                 845

tta aat aca gat gaa aac aag tat ggt ggt aga gga cta ctt ggc cat       2593
Leu Asn Thr Asp Glu Asn Lys Tyr Gly Gly Arg Gly Leu Leu Gly His
            850                 855                 860

gat cag aat att caa aga acc att agt aga aga gct gat gga atg aga       2641
Asp Gln Asn Ile Gln Arg Thr Ile Ser Arg Arg Ala Asp Gly Met Arg
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15

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ttt tgc ttg gaa gtg cct ctg cca agt aga agt gct cag gtc tac aag      2689
Phe Cys Leu Glu Val Pro Leu Pro Ser Arg Ser Ala Gln Val Tyr Lys
880                 885                 890                 895

ttg acc cga att cta aga gca tgatcactct agtaatcaaa gtgcctcata          2740
Leu Thr Arg Ile Leu Arg Ala
                900
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tgatgacaca aaaggaaagg ttctacattg cccttacact gatcaatatt gacacctttc   2800

cgaggtgagt ttctgtgatt cttgagcaga ctgttggcta gtcaattatc atgaactttt   2860

gccttcagca tccggatagt cgcttctcct gtgcaatgag ggcatggacg aattttttt   2920

tggcttgtca tgggggtcat aagcatccgc cagattaaga tttcacaggc ctcgagtaaa   2980

accatcactt actttaagga tacacaaaca caccaacggg gtgcaggctc tgataccttc   3040

taaagtg   3047

<210>   6
<211>   902
<212>   PRT
<213>   Solanum tuberosum

<400>   6

Met Leu Ser Leu Ser Asp Ser Ile Arg Ile Ser Ser Pro Leu Ser Asp
1   5   10   15

Ser Arg Leu Ser Phe Leu Ser Gln Thr Gly Ser Arg Thr Ser Arg Gln
            20   25   30

Leu Lys Phe Val Arg Ser Arg Arg Ala Arg Val Ser Arg Cys Arg Cys
        35   40   45

Ser Ala Thr Glu Gln Pro Pro Gln Arg Arg Lys Gln Arg Pro Glu
    50   55   60

Lys Tyr Lys Gln Ser Glu Glu Gly Lys Gly Ile Asp Pro Val Gly Phe
65   70   75   80

Leu Ser Lys Tyr Gly Ile Thr His Lys Ala Phe Ala Gln Phe Leu Arg
                85   90   95

Glu Arg Tyr Lys Ser Leu Lys Asp Leu Lys Asp Glu Ile Leu Thr Arg
                100   105   110
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16

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His Phe Ser Leu Lys Glu Met Ser Thr Gly Tyr Glu Leu Met Gly Met
        115             120             125

His Arg Asn Ile Gln His Arg Val Asp Phe Leu Glu Trp Ala Pro Gly
        130             135             140

Ala Arg Tyr Cys Ala Leu Ile Gly Asp Phe Asn Gly Trp Ser Thr Thr
145             150             155             160

Gly Asn Cys Ala Arg Glu Gly His Phe Gly His Asp Asp Tyr Gly Tyr
                165             170             175

Trp Phe Ile Ile Leu Glu Asp Lys Leu Arg Glu Gly Glu Glu Pro Asp
            180             185             190

Lys Leu Tyr Phe Gln Gln Tyr Asn Tyr Ala Glu Asp Tyr Gly Lys Gly
        195             200             205

Asp Thr Gly Ile Thr Val Glu Glu Ile Phe Lys Lys Ala Asn Asp Glu
    210             215             220

Tyr Trp Glu Pro Gly Glu Asp Arg Phe Ile Lys Ser Arg Tyr Glu Val
225             230             235             240

Ala Ala Lys Leu Tyr Glu Glu Met Phe Gly Pro Asn Gly Pro Gln Thr
            245             250             255

Glu Glu Glu Leu Glu Ala Met Pro Asp Ala Ala Thr Arg Tyr Lys Thr
        260             265             270

Trp Lys Glu Gln Gln Lys Glu Asp Pro Ala Ser Asn Leu Pro Ser Tyr
        275             280             285

Asp Val Val Asp Ser Gly Lys Glu Tyr Asp Ile Tyr Asn Ile Ile Gly
    290             295             300

Asp Pro Glu Ser Phe Lys Lys Phe Arg Met Lys Gln Pro Pro Ile Ala
305             310             315             320

Tyr Trp Leu Glu Thr Lys Lys Gly Arg Lys Gly Trp Leu Gln Lys Tyr
            325             330             335
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17

Met Pro Ala Leu Pro His Gly Ser Lys Tyr Arg Val Tyr Phe Asn Thr
        340   345   350

Pro Asn Gly Pro Leu Glu Arg Val Pro Ala Trp Ala Asn Phe Val Ile
        355   360   365

Pro Asp Ala Gly Gly Met Ala Leu Ala Val His Trp Glu Pro Pro Pro
    370   375   380

Glu Tyr Ala Tyr Lys Trp Lys His Lys Leu Pro Val Lys Pro Lys Ser
385   390   395   400

Leu Arg Ile Tyr Glu Cys His Val Gly Ile Ser Gly Gln Glu Pro Lys
            405   410   415

Val Ser Ser Phe Asn Asp Phe Ile Ser Lys Val Leu Pro His Val Lys
        420   425   430

Glu Ala Gly Tyr Asn Ala Ile Gln Ile Ile Gly Val Val Glu His Lys
        435   440   445

Asp Tyr Phe Thr Val Gly Tyr Arg Val Thr Asn Phe Tyr Ala Val Ser
    450   455   460

Ser Arg Tyr Gly Thr Pro Asp Asp Phe Lys Arg Leu Val Asp Glu Ala
465   470   475   480

His Gly Leu Gly Leu Leu Val Phe Leu Glu Ile Val His Ser Tyr Ala
            485   490   495

Ala Ala Asp Glu Met Val Gly Leu Ser Leu Phe Asp Gly Ala Asn Asp
        500   505   510

Cys Tyr Phe His Thr Gly Lys Arg Gly His His Lys Phe Trp Gly Thr
        515   520   525

Arg Met Phe Lys Tyr Gly Asp Leu Asp Val Leu His Phe Leu Leu Ser
    530   535   540

Asn Leu Asn Trp Trp Val Glu Glu Tyr His Val Asp Gly Phe His Phe
545   550   555   560

His Ser Leu Ser Ser Met Leu Tyr Thr His Asn Gly Phe Ala Ser Phe

18

Thr Gly Asp Met Asp Glu Tyr Cys Asn Gln Tyr Val Asp Lys Glu Ala
        580   585   590

Leu Leu Tyr Leu Ile Leu Ala Asn Glu Val Leu His Ala Leu His Pro
        595   600   605

Asn Val Ile Thr Ile Ala Glu Asp Ala Thr Leu Tyr Pro Gly Leu Cys
    610   615   620

Asp Pro Thr Ser Gln Gly Gly Leu Gly Phe Asp Tyr Phe Ala Asn Leu
625   630   635   640

Ser Ala Ser Glu Met Trp Leu Ala Leu Leu Glu Asn Thr Pro Asp His
            645   650   655

Glu Trp Cys Met Ser Lys Ile Val Ser Thr Leu Val Gly Asp Arg Gln
        660   665   670

Asn Thr Asp Lys Met Leu Leu Tyr Ala Glu Asn His Asn Gln Ser Ile
        675   680   685

Ser Gly Gly Arg Ser Phe Ala Glu Ile Leu Ile Gly Asn Ser Leu Gly
    690   695   700

Lys Ser Ser Ile Ser Gln Glu Ser Leu Leu Arg Gly Cys Ser Leu His
705   710   715   720

Lys Met Ile Arg Leu Ile Thr Ser Thr Ile Gly Gly His Ala Tyr Leu
            725   730   735

Asn Phe Met Gly Asn Glu Phe Gly His Pro Lys Arg Val Glu Phe Pro
        740   745   750

Met Ser Ser Asn Asn Phe Ser Phe Ser Leu Ala Asn Arg Arg Trp Asp
        755   760   765

Leu Leu Glu Asp Val Val His Tyr Gln Leu Phe Ser Phe Asp Lys Gly
    770   775   780

Met Met Asp Leu Asp Lys Asn Gly Arg Ile Leu Ser Arg Gly Leu Ala
785   790   795   800

19

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Asn Ile His His Val Asn Asp Thr Thr Met Val Ile Ser Tyr Leu Arg
            805             810             815

Gly Pro Asn Leu Phe Val Phe Asn Phe His Pro Val Asn Ser Tyr Glu
            820             825             830

Arg Tyr Ile Ile Gly Val Glu Glu Ala Gly Glu Tyr Gln Val Thr Leu
        835             840             845

Asn Thr Asp Glu Asn Lys Tyr Gly Gly Arg Gly Leu Leu Gly His Asp
    850             855             860

Gln Asn Ile Gln Arg Thr Ile Ser Arg Arg Ala Asp Gly Met Arg Phe
865             870             875             880

Cys Leu Glu Val Pro Leu Pro Ser Arg Ser Ala Gln Val Tyr Lys Leu
            885             890             895

Thr Arg Ile Leu Arg Ala
            900
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